

United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERC United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,507	03/30/2004	John S. Lollar	13097/3	5299
757 BRINKS HOF	7590 07/31/2007 ER GILSON & LIONE	•	EXAM	INER
P.O. BOX 1039	95	•	GIBBS, T	TERRA C
CHICAGO, IL	60610	. •	ART UNIT	PAPER NUMBER
	r		1635	
	`			
			MAIL DATE	DELIVERY MODE
			07/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES DEPARTMENT OF COMMERCE U.S. Patent and Trademark Office

DATE MAILED:

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION		ATTORNEY DOCKET NO.
10813507	3/30/04	LOLLAR, JOHN S.		13097/3
				EXAMINER
BRINKS HOFER GILS P.O. BOX 10395	ON & LIONE		1	Terra C. Gibbs
CHICAGO, IL 60610			ART UNIT	PAPER
			1635	7252007

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Notice to Comply with the Sequence Rules

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. §1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 C.F.R. §1.821-1.825 for the reason(s) set forth on the attached Sequence Listing Error Report. Applicant must fully comply with the sequence rules for any response to this action to be considered fully responsive.

APPLICANT IS GIVEN 30 days FROM THE DATE OF THIS LETTER WITHIN WHICH TO COMPLY WITH THE SEQUENCE RULES of 37 C.F.R. §1.821-1.825. Failure to comply with these requirements will result in ABANDOMENT of the application under 37 C.F.R. §1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 C.F.R. §1.136. In no case may an applicant extend the period for response beyond the six-month statutory period. Direct the response to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the response.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Terra C. Gibbs whose telephone number is 571-272-0758. The examiner can normally be reached on 9 am - 5 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, James Schultz can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's

PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

tcg July 25, 2007

/Terra C. Gibbs/

Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: Mon Jun 11 13:25:27 EDT 2007

Reviewer Comments:

seq Id 6:

Missing amino acid numbering, they non-aligned 645,650,655

Please delete text appearing after seq id 21.

Validated By CRFValidator v 1.0.2

Application No:

10813507

Version No:

2.0

Input Set:

Output Set:

Started: 2007-05-25 16:08:39.424

Finished: 2007-05-25 16:08:48.098

Elapsed: 0 hr(s) 0 min(s) 8 sec(s) 674 ms

Total Warnings: 30

Total Errors: 681

No. of SeqIDs Defined: 21

Actual SeqID Count: 21

Erro	or code	Error Description
W	112	Upper case found in data; Found at position(0) SeqId(6)
W	112	Upper case found in data; Found at position(3) SeqId(6)
W	112	Upper case found in data; Found at position(6) SeqId(6)
W	112	Upper case found in data; Found at position(9) SeqId(6)
W	112	Upper case found in data; Found at position(12) SeqId(6)
E	342	'n' position not defined found at POS: 15 SEQID(6)
W	112	Upper case found in data; Found at position(15) SeqId(6)
W	112	Upper case found in data; Found at position(18) SeqId(6)
W	112	Upper case found in data; Found at position(21) SeqId(6)
W	112	Upper case found in data; Found at position(24) SeqId(6)
W	112	.Upper case found in data; Found at position(27) SeqId(6)
W	112	Upper case found in data; Found at position(30) SeqId(6)
W	112	Upper case found in data; Found at position(33) SeqId(6)
W	112	Upper case found in data; Found at position(36) SeqId(6)
W	112	Upper case found in data; Found at position(39) SeqId(6)
W	112	Upper case found in data; Found at position(42) SeqId(6)
W	112	Upper case found in data; Found at position(45) SeqId(6)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (644)
E	323	Invalid/missing amino acid numbering SEQID (6)at Protein (645)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (649)

Input Set:

Output Set:

Started: 2007-05-25 16:08:39.424

Finished: 2007-05-25 16:08:48.098

Elapsed: 0 hr(s) 0 min(s) 8 sec(s) 674 ms

Total Warnings: 30
Total Errors: 681

No. of SeqIDs Defined: 21

Actual SeqID Count: 21

Err	or code	Error Description
E	323	Invalid/missing amino acid numbering SEQID (6)at Protein (650)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (654)
E	323	Invalid/missing amino acid numbering SEQID (6)at Protein (655)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (659)
· E	323	Invalid/missing amino acid numbering SEQID (6)at Protein (660)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (664)
E	323	Invalid/missing amino acid numbering SEQID (6)at Protein (665)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (669)
E	323	Invalid/missing amino acid numbering SEQID (6)at Protein (670)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (674)
E	323	Invalid/missing amino acid numbering SEQID (6)at Protein (675)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (679)
E	323	Invalid/missing amino acid numbering SEQID (6)at Protein (680)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (684)
E	323	Invalid/missing amino acid numbering SEQID (6)at Protein (685)
E	323	Invalid/missing amino acid numbering SEQID (6) POS (689)
E	323	Invalid/missing amino acid numbering SEQID (6) at Protein (690) This error has occured more than 20 times, will not be displayed
E	331	Count of Protein differs from the <211> tag Input: 2351 Calculated: 2335 SEQID(6)
W	213	Artificial or Unknown found in <213> in SEQ ID (14)
W	213	Artificial or Unknown found in <213> in SEQ ID (15)
W	213	Artificial or Unknown found in <213> in SEQ ID (16)

Input Set:

Output Set:

Started: 2007-05-25 16:08:39.424

Finished: 2007-05-25 16:08:48.098

Elapsed: 0 hr(s) 0 min(s) 8 sec(s) 674 ms

Total Warnings: 30
Total Errors: 681

No. of SeqIDs Defined: 21

Actual SeqID Count: 21

Err	or code	Error Description
W	213	Artificial or Unknown found in <213> in SEQ ID (17)
W	213	Artificial or Unknown found in <213> in SEQ ID (18)
W	213	Artificial or Unknown found in <213> in SEQ ID (19)
W	213	Artificial or Unknown found in <213> in SEQ ID (20)
W	213	Artificial or Unknown found in <213> in SEQ ID (21)
E	355	Empty lines found between the amino acid numbering and the
E	321	No. of Bases conflict, this line has no nucleotides SEQID (21)
E	355	Empty lines found between the amino acid numbering and the
E	321	No. of Bases conflict, this line has no nucleotides SEQID $(2\dot{1})$
W	112	Upper case found in data; Found at position(0) SeqId(21)
W	112	Upper case found in data; Found at position(1) SeqId(21)
W	112	Upper case found in data; Found at position(2) SeqId(21)
W	112	Upper case found in data; Found at position(14) SeqId(21) This error has occured more than 20 times, will not be displayed

SEQUENCE LISTING

```
<110> Lollar, John S.
<120> Nucleic Acid and Amino Acid Sequences
 encoding High-Level Expressor Factor VIII Polypeptides and
 Methods of Use
<130> 007157/ 276516
<140> 10813507
<141> 2004-03-30
<150> PCT/US02/33403
<151> 2002-10-07
<150> 60/327,388
<151> 2001-10-05
<160> 21
<170> FastSEQ for Windows Version 4.0
<210> 1
<211> 6402
<212> DNA
<213> Sus scrofa
<220>
<221> gene
<222> (1)...(6399)
<223> Factor VIII-- Full Length
<221> CDS
<222> (1)...(6399)
<400> 1
atg cag cta gag ctc tcc acc tgt gtc ttt ctg tgt ctc ttg cca ctc
Met Gln Leu Glu Leu Ser Thr Cys Val Phe Leu Cys Leu Leu Pro Leu.
1
                                     10
                                                         15
ggc ttt agt gcc atc agg aga tac tac ctg ggc gca gtg gaa ctg tcc
Gly Phe Ser Ala Ile Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
                                 25
tgg gac tac cgg caa agt gaa ctc ctc cgt gag ctg cac gtg gac acc
Trp Asp Tyr Arg Gln Ser Glu Leu Leu Arg Glu Leu His Val Asp Thr
         35
                             40
aga ttt cct gct aca gcg cca gga gct ctt ccg ttg ggc ccg tca gtc
                                                                   192
Arg Phe Pro Ala Thr Ala Pro Gly Ala Leu Pro Leu Gly Pro Ser Val
     50
ctg tac aaa aag act gtg ttc gta gag ttc acg gat caa ctt ttc agc
Leu Tyr Lys Lys Thr Val Phe Val Glu Phe Thr Asp Gln Leu Phe Ser
```

70

75

				ccc													288		
7	/al	Ala	Arg	Pro	Arg 85	Pro	Pro	Trp	Met	Gly 90	Leu	Leu	Gly	Pro	Thr 95	Ile			
					63					90	-				.93		'		
ć	cag	gct	gag	gtt	tac	gac	acg	gtg	gtc	gtt	acc	ctg	aag	aac	atg	gct	336		
(3ln	Ala	Glu	Val	Tyr	Asp	Thr	Val	Val	Val	Thr	Leu	Lys	Asn	Met	Ala			
				100					105					110					
1	ct	cat	ccc	gtt	agt	ctt	cac	act	atc	aac	atc	tee	ttc	taa	aaa	tet	384		
				Val	•			-	-		-								
			115					120					125		٠				
		-		gct Ala	-			-			_				_	-	432		
,	Jer	130	Gry	AIG	GIU	1 7 1	135	rsb	1113	1111	Ser	140	nrg	Olu	цуs	Olu			
																		•	
•	gac	gat	aaa	gtc	ctt	ccc	ggt	aaa	agc	caa	acc	tac	gtc	tgg	cag	gtc	480		
	-	Asp	Lys	Val	Leu		Gly	Lys	Ser	Gln		Tyr	Val	Trp	Gln				
	145					150					155					160			
	ctg	aaa	gaa	aat	ggt	cca	aca	gcc	tct	gac	cca	cca	tgt	ctc	acc	tac	528		
:	Leu	Lys	Glu	Asn	Gly	Pro	Thr	Ala	Ser	Asp	Pro	Pro	Cys	Leu	Thr	Tyr			
					165					170					175				
		tac	cta	tct	Cac	ata	asc	cta	ata	222	a a c	cta	aat	tca	aac	ctc	576		
			-	Ser			_	_			-	_					370		
		•		180			•		185	•	•			190	-				
			-	ctg	_	-	-	-	-		_	_		_	_		624		
	IIe	Gly	A1a 195	Leu	Leu	Val	Cys	Arg 200	GIu	GIĀ	Ser	Ļeu	205	Arg	Glu	Arg			
			1,5					200											
	acc	cag	aac	ctg	cac	gaa	ttt	gta	cta	ctt	ttt	gct	gtc	ttt	gat	gaa	672		
	Thr		Asn	Leu	His	Glu		Val	Leu	Leu	Phe		Val	Phe	Asp	Glu			
		210					215					220							
	ggg	aaa	agt	tgg	cac	tca	gca	aga	aat	gac	tcc	tgg	aca	cgg	gcc	atg	720		
	Gly	Lys	Ser	Trp	His	Ser	Ala	Arg	Asn	Asp	Ser	Trp	Thr	Arg	Ala	Met			
	225					230					235				•	240			
	aa+	ccc	ac=	cct	acc	aaa	acc	Car	cct	acs	ato	cac	aca	atc	aat	aac	768		
				Pro													, 00		
	•				245	-	•			250					255				
				agg													816		
	ıyr	vai	ASI	Arg 260	ser	Leu	PIO	GIY	265		СІУ	Cys	nis	шуs 270		ser			
	-			cac				-			-	-	-				864		
	Val	Tyr	_	His	Val	Ile	Gly		Gly	Thr	Ser	Pro			His	Ser			
			275					280					285						
	att	ttt	ctt	gaa	ggc	cac	acg	ttt	ctc	gtg	agg	cac	cat	cgc	cag	gct	912		
	Ile			Glu	Gly	His			Leu	Val	Arg		His	Arg	Gln	Ala			
		290					295					300							

.

	_		atc Ile	-												960
_	-		ggc Gly													1008
			atg Met 340													1056
	_	_	egg Arg													1104
-		-	tcg Ser	-	_	-		-								1152
			atc Ile			_	-									1200
			tac Tyr			_										1248
	_		agc Ser 420													1296
_			cag Gln													1344
			gat Asp													1392
	Gly		ctg Leu													1440
_			ttt Phe		Asn					Pro					Pro	1488
				Asp										Leu	aaa Lys	1536
			His					Pro					Glu		ttc Phe	1584
aag	tat	aaa	tgg	aca	gtg	act	gtg	gaa	gat	ggg	cca	acc	aaç	tec	gat	1632

Lys	Tyr 530	Lys	Trp	Thr	Val	Thr 535	Val	Glu	Asp	Gly	Pro 540	Thr	Lys	·Ser	Asp	
		-	ctg Leu		-			_	_							1680
-	_	-	tcg Ser						1			_				1728
	- T	-	caa Gln 580	-			•	_	_		-	_	_		-	1776
	_		tct Ser	-		-				-				-		1824
			cgc Arg					_	-					_		1872
			caa Gln	-				_							gtt Val 640	1920
	_	_	ttg Leu	_	-	-	-	-	-							1968
			agt Ser 660												ttc Phe	2016
			acc Thr					_	-		-	-				2064
-			ttc Phe			-	_	-							cca Pro	2112
,,			gtc Val			-				-	Leu			_		2160
			tta Leu												Asp	2208
		-				-	-		Pro					Ser	gga Gly	2256
-		-	att Ile	-		-	-		-	_					cct	2304

755 760 765

-		-	caa Gln	-							-		-	_	_	2352
			gac Asp	_	_				-			_	_	-	-	2400
	-	-	ccc Pro			-		-	-		-		_			2448
-			ggc Gly 820					-			-	-				2496
•	-	-	tat Tyr				-	-	•	•		_	_			2544
-	, ,	,	cgt Arg		-			-			-	-	-	-	-	2592
			gag Glu					-	-			-			_	2640
	-		tca Ser	-			_		_						-	2688
-	-		gcg Ala 900			-										2736
-	-	-	aat Asn			-				-		-				2784
			cac His				-		_		_					2832
	•		gaa Glu	-		_		_		-						2880
-			ttt Phe	•	-	-	-	-				_		_		2928
	_	-	gtt Val 980				-				-	-	_			2976

Lys Ala Arg Val Tyr Leu Lys Thr Asn Arg Lys Ile His Ile Asp Asp 995 1000 1005 gca gct tta tta act gag aat agg gca tct gca acg ttt atg gac aaa Ala Ala Leu Leu Thr Glu Asn Arg Ala Ser Ala Thr Phe Met Asp Lys 1010 1015 1020 aat act aca gct tcg gga tta aat cat gtg tca aat tgg ata aaa ggg Asn Thr Thr Ala Ser Gly Leu Asn His Val Ser Asn Trp Ile Lys Gly 1025 1035 1040 ccc ctt ggc aag aac ccc cta agc tcg gag cga ggc ccc agt cca gag Pro Leu Gly Lys Asn Pro Leu Ser Ser Glu Arg Gly Pro Ser Pro Glu 1045 1050 1055 cct t ctg aca tct tca gga tca gga aaa tct gtg aaa ggt cag agt tct Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060 1065 1070 ggg cag ggg aga ata cgg gtg gca gtg gaa gag gaa gaa ctg agc aaa Gly Gln Gly Arg Tle Arg Val Ala Val Glu Glu Glu Glu Glu Leu Ser Lys 1075 1080 1085 ggc aag atg atg atg ctt ccc aac agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1095 1100 tcg gct gat gtc caa gga aac gat aca cac agt caa gga aaa aaa gtc car Ala Asp Val Gln Gly Asn Asp Thr His Ser Gln Gly Lys Lys Ser 1105 1110 1115 1120 tcg gca gaa gag atg atg gaa agg aga aaa tta gtc caa gaa aaa gtc gac ga gaa gag gag aga atg gag gaa aaa tta gtc caa gaa aaa gtc gac gag gaa gag gag aga gag gag gag atg tta aca gcg gag gt gaa gag gag gag gag gag gag gag	aag	gca	cga	gtt	tac	tta	aaa	act	aat	aga	aag	att	cac	att	gat	gac	3024
gca gct tta tta act gag aat agg gca tct gca acg ttt atg gac aaa ala Ala Leu Leu Thr Glu Asn Arg Ala Ser Ala Thr Phe Met Asp Lys 1010 1015 1020 1025 1030 1035 1040 aat act aca gct tcg gga tta aat cat gtg tca aat tgg ata aaa ggg Asn Thr Thr Ala Ser Gly Leu Asn His Val Ser Asn Trp Ile Lys Gly 1025 1030 1035 1040 ccc ctt ggc aag ac ccc cta agc tcg gag cga ggc ccc agt cca gag Pro Leu Gly Lys Asn Pro Leu Ser Ser Glu Arg Gly Pro Ser Pro Glu 1045 1055 1055 ctt ctg aca tct tca gga tca gga aaa tct gtg aaa ggt cag agt tct Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060 1065 1070 1085 ggg cag ggg aga ata cgg gtg gca gtg gaa gag gaa gaa ctg agc aaa Gly Gln Gly Arg Ile Arg Val Ala Val Glu Glu Glu Glu Leu Ser Lys 1075 1080 1085 ggc aaa gag atg atg ctt cca aca agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1095 1100 tcg gct gat gtc caa gga aac gat aca cac agt caa gga aaa aag tct Ser Ala Asp Val Gln Gly Asn Asp Thr His Ser Gln Gly Lys Lys Ser 1110 1110 1115 1120 cgg gaa gag atg gaa agg agg aga aga ata tta gtc caa gaa aaa gtc gac Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125 1130 1135 ttg cct cag gtg tat aca gcg act gga act aaa aac acc agt caa gaa aaa gtc gac Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125 1130 1135 ttg cct cag gtg tat aca gcg act gga act aaa aac ttc ctg aga aac Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140 1145 1150 att ttc cac caa agc act gag ccc act gta gaa gag ttt gat ggg ggg Ile Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly 1155 1160 1165 tca cat gcg ccg gtg cct caa acc acc acc acc acc acc acc acc	Lys	Ala	Arg	Val	Tyr	Leu	Lys	Thr	Asn	Arg	Lys	Ile	His	Ile	Asp	Asp	
Ala Ala Leu Leu Thr Glu Asn Arg Ala Ser Ala Thr Phe Met Asp Lys 1010 1015 1020 1020 1015 1020 1020 1015 1020 1020			995	i				1000)				1005	,			
Ala Ala Leu Leu Thr Glu Asn Arg Ala Ser Ala Thr Phe Met Asp Lys 1010 1015 1020 1020 1015 1020 1020 1015 1020 1020																	
Ala Ala Leu Leu Thr Glu Asn Arg Ala Ser Ala Thr Phe Met Asp Lys 1010 1015 1020 1020 1015 1020 1020 1015 1020 1020	aca	act	tta	tta	act	gag	aat	agg	gca	tct	aca	aca	ttt	ato	σac	aaa	3072
and act aca gct tcg gga tta aat cat gtg tca aat tgg ata aaa ggg Asn Thr Thr Ala Ser Gly Leu Asn His Val Ser Asn Trp Ile Lys Gly 1025 1030 1035 1045 1045 1045 1055 1055 1050 1055 1055	-	•							_		-	_		_	_		
Asn Thr Thr Ala Ser Gly Leu Asn His Val Ser Asn Trp Ile Lys Gly 1025 1030 1035 1040 CCC ctt ggc aag aac ccc cta agc tcg gag cga ggc ccc agt cca gag Pro Leu Gly Lys Asn Pro Leu Ser Ser Glu Arg Glu Pro Ser Pro Glu 1045 1050 1055 CCC ctt ggc aag aac ccc cta agc tcg gag cga ggc ccc agt cca gag Pro Leu Gly Lys Asn Pro Leu Ser Ser Glu Arg Glu Pro Ser Pro Glu 1055 1055 CCC ctt gac act ct tca gga tca gga aact ct gtg aaa ggt cag agt tct Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060 1065 1070 Ggg cag ggg aga ata cgg gtg gca gtg gaa gag gaa gaa ctg aca agg cag ggg cag agg at ac cgg gta Ala Val Glu Glu Glu Leu Ser Lys 1075 1080 1085 Ggc aaa gag atg atg atg ctt ccc aac agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Leu Thr Phe Leu Thr Asn 1090 1100 Ctcg gt gat gtc caa gga aac gat aca cac agt caa gga aaa aag tct Ser Ala Asp Val Glu Gly Asn Asp Thr His Ser Gln Gly Lys Lys Ser 1105 1110 1115 1120 Ccgg gaa gag atg atg aag aga gaa aaa tta gtc caa gga aaa aag tct Ser Ala Asp Val Glu Met Mat Arg Arg Glu Lys Leu Val Gln Glu Lu Leu Thr Asn 1125 1130 1135 Ccgg gaa gag atg gt at aca gcg act gga act aag aat ttc ctg aga aca agg aag acg agg atg acg agg acg agg atg atg atg acg agg acg acg acg acg acg acg acg ac	nia			Deu	1111	Giu		-	nia	Ser	niu			1100	p	БуЗ	
Asn Thr Thr Ala Ser Gly Leu Asn His Val Ser Asn Trp Ile Lys Gly 1025 1030 1035 1035 1040 CCC Ctt ggc aag aac ccc cta agc tcg gag cga ggc ccc agt cca gag Pro Leu Gly Lys Asn Pro Leu Ser Ser Glu Arg Gly Pro Ser Pro Glu 1045 1050 1055 CCT ctt ctg aca tct tca gga tca gga aaa tct gtg aaa ggt cag agt tct Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060 1065 1070 Ggg caq ggg aga ata cgg gtg gca gtg gaa gag gaa gaa ctg agc aaa Gly Gln Gly Arg Ile Arg Val Ala Val Glu Glu Glu Leu Ser Lys 1075 1080 1085 Ggc aaa gag atg atg ctt ccc aac agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 11095 1100 tcg gct gat gtc caa gga aac gat aca cac agc gag caa gaa aaa tct Ser Ala Asp Val Gln Gly Arn Asp Thr His Ser Gln Gly Lys Lys Ser 1105 1110 1115 1120 cgg gaa gag atg gaa agg aga aaa aat ta gtc caa gga aaa cgc Gac Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125 1130 1135 ttg cct cag gtg tat aca gcg act gga act aag aat ttc ctg aga aac Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140 1145 1150 att ttt cac caa agc act gag ccc agt gta gaa ggg ttt gat ggg ggg Ile Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly 1155 1160 1165 1165 cca cat gcg ccg gtg cct caa gac agc agc agt tca tta aat gat tcg gca Ser His Ala Pro Val Pro Gln Asp Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 1195 1200		1010	,				1013	,				1020	,				
Asn Thr Thr Ala Ser Gly Leu Asn His Val Ser Asn Trp Ile Lys Gly 1025 1030 1035 1035 1040 CCC Ctt ggc aag aac ccc cta agc tcg gag cga ggc ccc agt cca gag Pro Leu Gly Lys Asn Pro Leu Ser Ser Glu Arg Gly Pro Ser Pro Glu 1045 1050 1055 CCT ctt ctg aca tct tca gga tca gga aaa tct gtg aaa ggt cag agt tct Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060 1065 1070 Ggg caq ggg aga ata cgg gtg gca gtg gaa gag gaa gaa ctg agc aaa Gly Gln Gly Arg Ile Arg Val Ala Val Glu Glu Glu Leu Ser Lys 1075 1080 1085 Ggc aaa gag atg atg ctt ccc aac agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 11095 1100 tcg gct gat gtc caa gga aac gat aca cac agc gag caa gaa aaa tct Ser Ala Asp Val Gln Gly Arn Asp Thr His Ser Gln Gly Lys Lys Ser 1105 1110 1115 1120 cgg gaa gag atg gaa agg aga aaa aat ta gtc caa gga aaa cgc Gac Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125 1130 1135 ttg cct cag gtg tat aca gcg act gga act aag aat ttc ctg aga aac Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140 1145 1150 att ttt cac caa agc act gag ccc agt gta gaa ggg ttt gat ggg ggg Ile Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly 1155 1160 1165 1165 cca cat gcg ccg gtg cct caa gac agc agc agt tca tta aat gat tcg gca Ser His Ala Pro Val Pro Gln Asp Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 1195 1200																	2100
1025 1030 1035 1040 ccc ctt ggc aag aac ccc cta agc tcg ggc cga ggc ccc agt cca gag Pro Leu Gly Lys Asn Pro Leu Ser Ser Glu Arg Gly Pro Ser Pro Glu 1045 1050 1055 ctt ctg aca tct tca gga tca gga aaa tct gtg aaa ggt cag agt tct Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060 1070 1070 ggg cag ggg aga ata cgg gtg gca gtg gaa gag gaa gaa ctg agc aaa Gly Gln Gly Arg Ile Arg Val Ala Val Glu Glu Glu Glu Leu Ser Lys 1075 1080 1085 ggg aaa agag atg gtg ctc caa aca agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1100 1100 tcg gct gat gtc caa gga aca gat aca cac agt caa gga aaa aag tct Ser Ala Asp Val Glu Glu Glu Lys Lys Ser 1110 1115 1120 cgg gaa gag atg gaa agg agg gaa aaa tta gtc caa gga aaa aag tct Ser Ala Asp Val Glu Arg Arg Glu Lys Lys Lys Ser 1110 1120 cgg gaa gag atg gaa agg agg gaa aaa tta gtc caa gga aaa gcc gac Arg Glu Glu Met Glu Arg Arg Glu Lys Lys Lys Ser 1125 1120 cgg gaa gag atg gaa agg acc act gag acc agg act aac gaa aaa gtc gac Arg Glu Glu Met Glu Arg Arg Glu Lys Lys Lys Ser 1130 1135 ttg cct cag gtg tat aca gcg act gga acc agg act aac gad aac gat acc agg acc acc agg acc acc agg acc acc				-	-												3120
CCC	Asn	Thr	Thr	Ala	Ser	Gly	Leu	Asn	His	Val	Ser	Asn	Trp	Ile	Lys	Gly	
Pro Leu Gly Lys Asn Pro Leu Ser Ser Glu Arg Gly Pro Ser Pro Glu 1045	1025	5				1030)				1035	5				1040	
Pro Leu Gly Lys Asn Pro Leu Ser Ser Glu Arg Gly Pro Ser Pro Glu 1045			•														
1045 1050 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055 1055	ccc	ctt	ggc	aag	aac	ccc	cta	agc	tcg	gag	cga	ggc	ccc	agt	cca	gag	3168
cett ctg aca tct tca gga tca gga aaa tct gtg aaa ggt cag agt tct Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060	Pro	Leu	Gly	Lys	Asn	Pro	Leu	Ser	Ser	Glu	Arg	Gly	Pro	Ser	Pro	Glu	
cett ctg aca tct tca gga tca gga aaa tct gtg aaa ggt cag agt tct Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060			_	-	1045	5				1050)	_			1059	5	
Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060																	
Leu Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser 1060						~~~	+	~~~		+ ~+	~+ ~		~~+	~~~	a ort	t at	3216
ggg cag ggg aga ata cgg gtg gca gtg gaa gag gaa gaa ctg agc aaa Gly Gln Gly Arg Ile Arg Val Ala Val Glu Glu Glu Glu Glu Leu Ser Lys 1075 1080 1085 ggc aaa gag atg atg ctt ccc aac agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1095 1100 tcg gct gat gtc caa gga aac gat aca cac agt caa gga aaa aag tct Ser Ala Asp Val Gln Gly Asn Asp Thr His Ser Gln Gly Lys Lys Ser 1105 1110 1115 1120 cgg gaa gag atg gaa agg agg aga aaa aaa tta gtc caa gaa aaa gtc gac Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125 1130 1135 ttg cct cag gtg tat aca gcg act gga act aag aat ttc ctg aga aac Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140 1145 1150 att ttt cac caa agc act gag ccc agt gta gaa ggg ttt gat ggg ggg Ile Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly 1155 1160 1165 tca cat gcg ccg gtg cct caa gac agc agg tca tta aat gat tcg gca Ser His Ala Pro Val Pro Gln Asp Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag acc cac ag gca act cac at agc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu		-												_			3210
ggg cag ggg aga ata cgg gtg gca gtg gaa gag gaa gaa ctg agc aaa Gly Gln Gly Arg Ile Arg Val Ala Val Glu Glu Glu Glu Leu Ser Lys 1075 1080 1085 ggc aaa gag atg atg ctt ccc aac agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1095 1100 tcg gct gat gtc caa gga aac gat aca cac agt caa gga aaa aag tct Ser Ala Asp Val Gln Gly Asn Asp Thr His Ser Gln Gly Lys Lys Ser 1110 1115 1120 cgg gaa gag atg gaa agg aga gaa aaa tta gtc caa gaa aaa gtc gac Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125 1130 1135 ttg cct cag gtg tat aca ggg act gac agg act aag aat ttc ctg aga aac Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140 1145 1150 att ttt cac caa agc act gag ccc agt gta gaa ggg ttt gat ggg ggg Ile Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly 1155 1160 1165 tca cat gcg ccg gtg cct caa gac agc agc agg tca tta aat gat tcg gca Ser His Ala Pro Val Pro Gln Asp Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gac gag act cac ata gcc cat ttc tca gca att agg gag Ggg Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu Glu 1190 1195 1200 gca ccc ttg gaa gcc ccg gga aat cga acc aga gcd cca ggt cca ggg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Gly Pro Arg Ser	Leu	Leu	Thr			GIĀ	Ser	GLY	_		Val	ГЛЗ	GLY			Ser	
Sign				1060)				1065	5				1070)		
Sign																	
ggc aaa gag atg atg ctt ccc aac agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1095 1100 1100 1000 1005 1100 1100	ggg	cag	ggg	aga	ata	cgg	gtg	gca	gtg	gaa	gag	gaa	gaa	ctg	agc	aaa	3264
ggc aaa gag atg atg ctt ccc aac agc gag ctc acc ttt ctc act aac Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1095 1100 1100 1100 1100 1100 1100	Gly	Gln	Gly	Arg	Ile	Arg	Val	Ala	Val	Glu	Glu	Glu	Glu	Leu	Ser	Lys	
Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1095 1100 1100 1100 1005 1100 1100			1075	5				1080)				1085	5			
Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1095 1100 1100 1100 1005 1100 1100																	
Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu Thr Asn 1090 1095 1100 1100 1100 1005 1100 1100	aac	222	nan	ato	, ata	ctt	ccc	220	age	aaa	ctc	acc	+++	ctc	act	aac	3312
tcg gct gat gtc caa gga aac gat gat aca cac agt caa gga aaa aag tct Ser Ala Asp Val Gln Gly Asn Asp Thr His Ser Gln Gly Lys Lys Ser 1105				-	-				-								JJ12
teg get gat gtc caa gga aac gat aca cac agt caa gga aaa aag tet Ser Ala Asp Val Gln Gly Asn Asp Thr His Ser Gln Gly Lys Lys Ser 1105	GIĀ	_		Met	Met	Leu			ser	GIU	ьeu			теп	Int	ASII	
Ser Ala Asp Val Gln Gly Asn Asp Thr His Ser Gln Gly Lys Lys Ser 1105		1090)				1095	5				1100)				
Ser Ala Asp Val Gln Gly Asn Asp Thr His Ser Gln Gly Lys Lys Ser 1105					•												
11105	tcg	gct	gat	gtc	caa	gga	aac	gat	aca	cac	agt	caa	gga	aaa	aag	tct	3360
cgg gaa gag atg gaa agg aga gaa aaa tta gtc caa gaa aaa gtc gac Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125 1130 1135 ttg cct cag gtg tat aca gcg act gga act aag aat ttc ctg aga aac Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140 1145 1150 att ttt cac caa agc act gag ccc agt gta gaa ggg ttt gat ggg ggg Ile Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly 1155 1160 1165 tca cat gcg ccg gtg cct caa gac agc agg tca tta aat gat tcg gca Ser His Ala Pro Val Pro Gln Asp Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 1195 1200 gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser	Ser	Ala	Asp	Val	Gln	Gly	Asn	Asp	Thr	His	Ser	Gln	Gly	Lys	Lys	Ser	
Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125	1105	5				1110)				1115	5				1120	
Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125																	
Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln Glu Lys Val Asp 1125	caa	σaa	gag	atq	gaa	adq	aga	gaa	aaa	tta	qtc	caa	qaa	aaa	gtc	gac	3408
ttg cct cag gtg tat aca gcg act gga act aag aat ttc ctg aga aac Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140																	
ttg cct cag gtg tat aca gcg act gga act aag aat ttc ctg aga aac Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140 1145 1150 att ttt cac caa agc act gag ccc agt gta gaa ggg ttt gat ggg ggg Ile Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly 1155 1160 1165 tca cat gcg ccg gtg cct caa gac agc agg tca tta aat gat tcg gca Ser His Ala Pro Val Pro Gln Asp Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 1195 1200 gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser		014					9		-,-				•	1-			
Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140					112.	٠.				113	,				115.	5	
Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys Asn Phe Leu Arg Asn 1140																	2156
att ttt cac caa agc act gag ccc agt gta gaa ggg ttt gat ggg ggg Ile Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly 1155	_		_														3456
att ttt cac caa agc act gag ccc agt gta gaa ggg ttt gat ggg ggg Ile Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly 1155 1160 1165 tca cat gcg ccg gtg cct caa gac agc agg tca tta aat gat tcg gca Ser His Ala Pro Val Pro Gln Asp Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 1195 1200 gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser	Leu	Pro	GIn		_	Thr	Ala	Thr	GTĀ	Thr	гла	Asn	Phe			Asn	
The Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly				1140)				1145	5				115	0		
The Phe His Gln Ser Thr Glu Pro Ser Val Glu Gly Phe Asp Gly Gly																	
tca cat gcg ccg gtg cct caa gac agc agg tca tta aat gat tcg gca Ser His Ala Pro Val Pro Gln Asp Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1175 1180 1180 1180 1180 1180 1180 1180 1185 1180 1185 1180 1185 1180 1185 1180 1180 1185 1180 1180 1180 1180 1180 1185 1180 1190 1195 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1200 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195 1195	att	ttt	cac	caa	agc	act	gag	ccc	agt	gta	gaa	ggg	ttt	gat	ggg	ggg	3504
tca cat gcg ccg gtg cct caa gac agc agg tca tta aat gat tcg gca Ser His Ala Pro Val Pro Gln Asp Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 1195 1200 gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser	Ile	Phe	His	Gln	Ser	Thr	Glu	Pro	Ser	Val	Glu	Gly	Phe	Asp	Gly	Gly	
Ser His Ala Pro Val Pro Val Pro Gln Asp Ser Arg Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser			1155	5				1160	0				1169	5			
Ser His Ala Pro Val Pro Val Pro Gln Asp Ser Arg Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser																	
Ser His Ala Pro Val Pro Val Pro Gln Asp Ser Arg Ser Arg Ser Leu Asn Asp Ser Ala 1170 1175 1180 gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser	tca	cat	aca	cca	ata	cct	caa	gac	agc	agg	tca	tta	aat	gat	tcq	qca	3552
gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185				_													
gag aga gca gag act cac ata gcc cat ttc tca gca att agg gaa gag Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185 1190 1195 1200 gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser	501				, 41					9							
Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185		T T /	U				11/:	-				110	•				
Glu Arg Ala Glu Thr His Ile Ala His Phe Ser Ala Ile Arg Glu Glu 1185										L F:	L				~	~~~	2600
1185 1190 1195 1200 gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser	-	_	-														3600
gca ccc ttg gaa gcc ccg gga aat cga aca ggt cca ggt ccg agg agt Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser	Glu	Arg	Ala	Glu	Thr	His	Ile	Ala	His	Phe			Ile	Arg	Glu		
Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser	118	5				1190	0				119	5		•		1200	
Ala Pro Leu Glu Ala Pro Gly Asn Arg Thr Gly Pro Gly Pro Arg Ser																	
	gca	ccc	ttg	gaa	gcc	ccg	gga	aat	cga	aca	ggt	cca	ggt	ccg	agg	agt	3648
1205 1210 1215	Ala	Pro	Leu	Glu	Ala	Pro	Gly	Asn	Arg	Thr	Gly	Pro	Gly	Pro	Arg	Ser	
					120	5				121	0				121	5	

gcg	gtt	ccc	cgc	cgc	gtt	aag	cag	agc	ttg	aaa	cag	atc	aga	ctc	ccg	3696
Ala	Val	Pro	Arg	Arg	Val	Lys	Gln	Ser	Leu	Lys	Gln	Ile	Arg	Leu	Pro	
			1220)				1225	i				1230)		
cta	qaa	gaa	ata	aaq	cct	qaa	agg	aaa	ata	qtt	ctq	aat	qcc	acc	tca	3744
	-	-	Ile	-		_				-	_		-			
Leu	014	1235		210		014	1240	_	, 42			1245				
		125	,				1210	•				141.	•			
																3792
				-	_	_									aat '	3172
Thr	-	-	Ser	GIu	Ser			Ile	Leu	GIn	_		гЛа	Arg	Asn	
	1250)				1255)				1260)				
aac	ctt	tct	tta	cct	ttc	ctg	acc	ttg	gaa	atg	gcc	gga	ggt	caa	gga	3840
Asn	Leu	Ser	Leu	Pro	Phe	Leu	Thr	Leu	Glu	Met	Ala	Gly	Gly	Gln	Gly	
1265	5				1270)				1275	5				1280	
aag	atc	agc	gcc	ctg	ggg	aaa	agt	gcc	gca	ggc	ccg	ctg	gcg	tcc	ggg	3888
Lvs	Ile	Ser	Ala	Leu	Gly	Lys	Ser	Ala	Ala	Gly	Pro	Leu	Ala	Ser	Gly	
-				1285		-			1290					1295		
224	cta	aaa	aag	act	at t	ctc	t ct	tca	aca	aac	tta	tet	maa	aca	tet	3936
_	-		Lys	-	-				-		_		-			3,30
гуз	ьeu	GIU			Vai	Leu	ser			GIY	Leu	Ser			ser	
			1300	,				1305	•				1310	,		
		-	gag					-	-	_						3984
Gly	Lys	Ala	Glu	Phe	Leu	Pro	Lys	Val	Arg	Val	His	Arg	Glu	Asp	Leu	
		1315	5				1320)				132	5			
ttg	cct	caa	aaa	acc	agc	aat	gtt	tct	tgc	gca	cac	ggg	gat	ctc	ggc	4032
Leu	Pro	Gln	Lys	Thr	Ser	Asn	Val	Ser	Cys	Ala	His	Gly	Asp	Leu	Gly	
	1330)				133	5				1340)				
caq	qaq	atc	ttc	ctq	caq	aaa	aca	cdd	qqa	cct	gtt	aac	ctg	aac	aaa	4080
-			Phe	_	-						-		_			
1345					1350	-		_	_	135					1360	
	-					-										
at a	aat	202	cct	aas	aaa	act	ccc	too	nss	ctt	cta	aat	ccc	cca	ata	4128
-			Pro													1120
vai	ASII	Arg	FIO			1111	FIO	Ser			Leu	GLY	110	1375		
				136	5				1370	U				137.		
					_			_								4176
															ctc	4176
Pro	Lys	Glu	Trp		Ser	Leu	Glu	_		Pro	Lys	Ser			Leu	
			1380	0				138	5				139	D		
agg	acg	aaa	gac	atc	atc	agt	tta	ccc	ctg	gac	cgt	cac	gaa	agc	aat	4224

*	Application No.	Applicant(s)	***************************************
N. C. A. O. I.	10813507	LOLLAR, JOHI	N S.
Notice to Comply	Examiner	Art Unit	
	Terra C. Gibbs	1635	
NOTICE TO COMPLY WITH REQUIREMENT NUCLEOTIDE SEQUENCE AND/OR AMINO			AINING
Applicant must file the items indicated below within the to avoid abandonment under 35 U.S.C. § 133 (extension 1.136(a)).			
The nucleotide and/or amino acid sequence disclosure for such a disclosure as set forth in 37 C.F.R. 1.821 - 1			the requirements
☑ 1. This application clearly fails to comply with the redirected to the final rulemaking notice published at the effective filing date is on or after July 1, 1998, s 1998) and 1211 OG 82 (June 23, 1998).	: 55 FR 18230 (May 1, 199	90), and 1114 OG 29 (May	/ 15, 1990). If
2. This application does not contain, as a separate required by 37 C.F.R. 1.821(c).	part of the disclosure on	paper copy, a "Sequence	Listing" as
☐ 3. A copy of the "Sequence Listing" in computer re- 37 C.F.R. 1.821(e).	adable form has not been	submitted as required by	
4. A copy of the "Sequence Listing" in computer recomputer readable form does not comply with the attached copy of the marked -up "Raw Sequence I.	requirements of 37 C.F.R		
5. The computer readable form that has been filed unreadable as indicated on the attached CRF Disk submitted as required by 37 C.F.R. 1.825(d).			
☐ 6. The paper copy of the "Sequence Listing" is not as required by 37 C.F.R. 1.821(e).	the same as the compute	er readable from of the "Se	equence Listing"
☑ 7. Other: Please see attached Sequence Listing En	rror Form at "Reviewer Co	omments".	
Applicant Must Provide: ☑ An initial or substitute computer readable form (CR	RF) copy of the "Sequence	e Listing".	
An initial or substitute paper copy of the "Sequence directing its entry into the specification.	e Listing", as well as a l	n amendment specif	ically
A statement that the content of the paper and con no new matter, as required by 37 C.F.R. 1.821(e) or 1.			pplicable, include

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (571) 272-2510 For CRF Submission Help, call (571) 272-2501/2583. PatentIn Software Program Support

entIn Software Program Support
Technical Assistance......703-287-0200

To Purchase Patentin Software......703-306-2600

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR REPLY